

I claim:

1. A communication system with variable filter bandwidth comprises:
 - a first mixer circuit disposed within a high frequency integrated circuit having input ports configured to receive a first communication signal and shift the frequency range of said communication signal to a first frequency range;
 - a second mixer circuit disposed within said high frequency integrated circuit having input ports configured to receive said first communication signal and shift the frequency range of said first communication signal to a second frequency range;
 - an amplifier coupled to said first and second mixer circuits for providing said first communication signal to said first and second mixer circuits;
 - an activation circuit coupled to the first and second mixer circuits so as to provide an activation signal that selectively activates any one of the mixer circuits;
 - first and second filter circuits each configured to receive a signal from said first and second mixer circuits, when a corresponding one of said mixer circuits is activated and to provide a signal to a low frequency integrated circuit; and
 - wherein when one of said mixer circuits is activated, the remaining mixer circuit does not generate an output voltage signal.
2. The invention in accordance with claim 1 wherein said first and second frequency range are substantially the same.
3. The invention in accordance with claim 1 wherein said filter circuits are bandpass filters.
4. The invention in accordance with claim 3 wherein the frequency characteristics of said bandpass filters are different from each other.

5. The invention in accordance with claim 4, wherein the termination impedance of the output stage of each of said mixer circuits substantially matches the termination impedance of the input stage of each one of said bandpass filters.

6. In a communication system, a method for routing a signal provided by a mixer circuit disposed in a high frequency integrated circuit to one of a plurality of filter circuits, said method comprising the steps of:

receiving a communication signal via a first amplifier and providing said communication signal to a plurality of mixing circuits for shifting the frequency range of said communication signal;

providing an activation signal generated by an activation circuit that selectively activates any one of said mixer circuits while remaining mixer circuits does not generate an output voltage signal; and

coupling a plurality of filter circuits to said mixer circuits such that each of said filter circuits is configured to receive a signal from a corresponding mixer circuit, when said corresponding mixing circuit is activated and to dispense a signal to a low frequency integrated circuit.

7. The method in accordance with claim 6 wherein said step of shifting the frequency range further comprises the step of shifting the frequency range via each mixer circuit to substantially the same frequency range.

8. The method in accordance with claim 7 further comprising the step of bandpass filtering said signal provided by said activated mixer circuit via a corresponding one of said filter circuits.

9. The invention in accordance with claim 8, further comprising the step of substantially matching the termination impedance of the output stage of each of said mixer circuits with the termination impedance of the input stage of each one of said bandpass filters.